3|ø|

OIPE

#2

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```
RAW SEQUENCE LISTING                    DATE: 02/27/2002
PATENT APPLICATION:  US/10/067,482      TIME: 08:26:01

         Input Set : A:\1U 102 R1.ST25.txt
         Output Set: N:\CRF3\02272002\J067482.raw
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   3 <110> APPLICANT: OriGene Technologies, Inc.
   5 <120> TITLE OF INVENTION: Angiogenesis Dehydrogenase Gene
   7 <130> FILE REFERENCE: 1U 102 R1
C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/067,482
C--> 9 <141> CURRENT FILING DATE: 2002-02-07
   9 <160> NUMBER OF SEQ ID NOS: 4
  11 <170> SOFTWARE: PatentIn version 3.1
  13 <210> SEQ ID NO: 1
  14 <211> LENGTH: 3727
  15 <212> TYPE: DNA
  16 <213> ORGANISM: homo sapiens
  18 <220> FEATURE:
  19 <221> NAME/KEY: CDS
  20 <222> LOCATION: (28)..(1689)
  21 <223> OTHER INFORMATION:
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  26                              Met Ala Ala Val Ser Leu Arg Leu Gly
  27                               1               5
  29 gac ttg gtg tgg ggg aaa ctc ggc cga tat cct cct tgg cca gga aag     102
  30 Asp Leu Val Trp Gly Lys Leu Gly Arg Tyr Pro Pro Trp Pro Gly Lys
  31 10              15                  20                  25
  33 att gtt aat cca cca aag gac ttg aag aaa cct cgc gga aag aaa tgc     150
  34 Ile Val Asn Pro Pro Lys Asp Leu Lys Lys Pro Arg Gly Lys Lys Cys
  35                 30                  35                  40
  37 ttc ttt gtg aaa ttt ttt gga aca gaa gat cat gcc tgg atc aaa gtg     198
  38 Phe Phe Val Lys Phe Phe Gly Thr Glu Asp His Ala Trp Ile Lys Val
  39              45                  50                  55
  41 gaa cag ctg aag cca tat cat gct cat aaa gag gaa atg ata aaa att     246
  42 Glu Gln Leu Lys Pro Tyr His Ala His Lys Glu Glu Met Ile Lys Ile
  43          60                  65                  70
  45 aac aag ggt aaa cga ttc cag caa gcg gta gat gct gtc gaa gag ttc     294
  46 Asn Lys Gly Lys Arg Phe Gln Gln Ala Val Asp Ala Val Glu Glu Phe
  47 75                  80                  85
  49 ctc agg aga gcc aaa ggg aaa gac cag acg tca tcc cac aat tct tct     342
  50 Leu Arg Arg Ala Lys Gly Lys Asp Gln Thr Ser Ser His Asn Ser Ser
  51 90                  95                  100                 105
  53 gat gac aag aat cga cgt aat tcc agt gag gag aga agt agg cca aac     390
  54 Asp Asp Lys Asn Arg Arg Asn Ser Ser Glu Glu Arg Ser Arg Pro Asn
  55                 110                 115                 120
  57 tca ggt gat gag aag cgc aaa ctt agc ctg tct gaa ggg aag gtg aag     438
  58 Ser Gly Asp Glu Lys Arg Lys Leu Ser Leu Ser Glu Gly Lys Val Lys
  59                 125                 130                 135
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/067,482

DATE: 02/27/2002
TIME: 08:26:01

Input Set : A:\1U 102 R1.ST25.txt
Output Set: N:\CRF3\02272002\J067482.raw

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61  aag aac atg gga gaa gga aag aag agg gtg tct tca ggc tct tca gag      486
62  Lys Asn Met Gly Glu Gly Lys Lys Arg Val Ser Ser Gly Ser Ser Glu
63          140             145             150
65  aga ggc tcc aaa tcc cct ctg aaa aga gcc caa gag caa agt ccc cgg      534
66  Arg Gly Ser Lys Ser Pro Leu Lys Arg Ala Gln Glu Gln Ser Pro Arg
67      155             160             165
69  aag cgg ggt cgg ccc cca aag gat gag aag gat ctc acc atc ccg gag      582
70  Lys Arg Gly Arg Pro Pro Lys Asp Glu Lys Asp Leu Thr Ile Pro Glu
71  170             175             180             185
73  tct agt acc gtg aag ggg atg atg gcc gga ccg atg gcc gcg ttt aaa      630
74  Ser Ser Thr Val Lys Gly Met Met Ala Gly Pro Met Ala Ala Phe Lys
75              190             195             200
77  tgg cag cca acc gca agc gag cct gtt aaa gat gca gat cct cat ttc      678
78  Trp Gln Pro Thr Ala Ser Glu Pro Val Lys Asp Ala Asp Pro His Phe
79          205             210             215
81  cat cat ttc ctg cta agc caa aca gag aag cca gct gtc tgt tac cag      726
82  His His Phe Leu Leu Ser Gln Thr Glu Lys Pro Ala Val Cys Tyr Gln
83          220             225             230
85  gca atc acg aag aag ttg aaa ata tgt gaa gag gaa act ggc tcc acc      774
86  Ala Ile Thr Lys Lys Leu Lys Ile Cys Glu Glu Glu Thr Gly Ser Thr
87      235             240             245
89  tcc atc cag gca gct gac agc aca gcc gtg aat ggc agc atc aca ccc      822
90  Ser Ile Gln Ala Ala Asp Ser Thr Ala Val Asn Gly Ser Ile Thr Pro
91  250             255             260             265
93  aca gac aaa aag ata gga ttt ttg ggc ctt ggt ctc atg gga agt gga      870
94  Thr Asp Lys Lys Ile Gly Phe Leu Gly Leu Gly Leu Met Gly Ser Gly
95              270             275             280
97  atc gtc tcc aac ttg cta aaa atg ggt cac aca gtg act gtc tgg aac      918
98  Ile Val Ser Asn Leu Leu Lys Met Gly His Thr Val Thr Val Trp Asn
99              285             290             295
101 cgc act gca gag aaa tgt gat ttg ttc atc cag gag ggg gcc cgt ctg      966
102 Arg Thr Ala Glu Lys Cys Asp Leu Phe Ile Gln Glu Gly Ala Arg Leu
103         300             305             310
105 gga aga acc ccc gct gaa gtc gtc tca acc tgc gac atc act ttc gcc     1014
106 Gly Arg Thr Pro Ala Glu Val Val Ser Thr Cys Asp Ile Thr Phe Ala
107     315             320             325
109 tgc gtg tcg gat ccc aag gcg gcc aag gac ctg gtg ctg ggc ccc agt     1062
110 Cys Val Ser Asp Pro Lys Ala Ala Lys Asp Leu Val Leu Gly Pro Ser
111 330             335             340             345
113 ggt gtg ctg caa ggg atc cgc cct ggg aag tgc tac gtg gac atg tca     1110
114 Gly Val Leu Gln Gly Ile Arg Pro Gly Lys Cys Tyr Val Asp Met Ser
115             350             355             360
117 aca gtg gac gct gac acc gtc act gag ctg gcc cag gtg att gtg tcc     1158
118 Thr Val Asp Ala Asp Thr Val Thr Glu Leu Ala Gln Val Ile Val Ser
119             365             370             375
121 agg ggg ggg cgc ttt ctg gaa gcc ccc gtc tca ggg aat cag cag ctg     1206
122 Arg Gly Gly Arg Phe Leu Glu Ala Pro Val Ser Gly Asn Gln Gln Leu
123         380             385             390
125 tct aat gac ggg atg ttg gtg atc tta gcg gct gga gac agg ggc tta     1254
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RAW SEQUENCE LISTING   DATE: 02/27/2002
PATENT APPLICATION: US/10/067,482   TIME: 08:26:01

Input Set : A:\1U 102 R1.ST25.txt
Output Set: N:\CRF3\02272002\J067482.raw

```
126 Ser Asn Asp Gly Met Leu Val Ile Leu Ala Ala Gly Asp Arg Gly Leu
127     395             400                 405
129 tat gag gac tgc agc agc tgc ttc cag gcg atg ggg aag acc tcc ttc     1302
130 Tyr Glu Asp Cys Ser Ser Cys Phe Gln Ala Met Gly Lys Thr Ser Phe
131 410             415                 420                 425
133 ttc cta ggt gaa gtg ggc aat gca gcc aag atg atg ctg atc gtg aac     1350
134 Phe Leu Gly Glu Val Gly Asn Ala Ala Lys Met Met Leu Ile Val Asn
135             430                 435                 440
137 atg gtc caa ggg agc ttc atg gcc act att gcc gag ggg ctg acc ctg     1398
138 Met Val Gln Gly Ser Phe Met Ala Thr Ile Ala Glu Gly Leu Thr Leu
139             445                 450                 455
141 gcc cac gtg aca ggc cag tcc cag cag aca ctc ttg gac atc ctc aat     1446
142 Ala His Val Thr Gly Gln Ser Gln Gln Thr Leu Leu Asp Ile Leu Asn
143         460                 465                 470
145 cag gga cag ttg gcc agc atc ttc ctg gac cag aag tgc caa aat atc     1494
146 Gln Gly Gln Leu Ala Ser Ile Phe Leu Asp Gln Lys Cys Gln Asn Ile
147     475                 480                 485
149 ctg caa gga aac ttt aag cct gat ttc tac ctg aaa tac att cag aag     1542
150 Leu Gln Gly Asn Phe Lys Pro Asp Phe Tyr Leu Lys Tyr Ile Gln Lys
151 490                 495                 500                 505
153 gat ctc cgc tta gcc att gcg ctg ggt gat gcg gtc aac cat ccg act     1590
154 Asp Leu Arg Leu Ala Ile Ala Leu Gly Asp Ala Val Asn His Pro Thr
155             510                 515                 520
157 ccc atg gca gct gca gca aat gag gtg tac aaa aga gcc aag gcg ctg     1638
158 Pro Met Ala Ala Ala Ala Asn Glu Val Tyr Lys Arg Ala Lys Ala Leu
159             525                 530                 535
161 gac cag tcc gac aac gat atg tcc gcc gtg tac cga gcc tac ata cac     1686
162 Asp Gln Ser Asp Asn Asp Met Ser Ala Val Tyr Arg Ala Tyr Ile His
163         540                 545                 550
165 taa gctgtcgaca ccccgccctc acccctccaa tcccccctct gaccccctct          1739
167 tcctcacatg gggtcggggg cctgggagtt cattctggac cagcccacct atctccattt   1799
169 ccttttatac agactttgag acttgccatc agcacagcac acagcagcac ccttcccctg   1859
171 aggccggtgg ggaggggaca agtgtcagca ggattggcgt gtgggaaagc tcttgagctg   1919
173 ggcactggcc ccccggacga ggtggctgtg tgttcacaca cacacacaca cacacacaca   1979
175 ggctctcgcc ccaggataga agctgcccag aaactgctgc ctggcttttt ttcttccgag   2039
177 cttgtcttat ctcaaacccc ttccagtcaa ggaactagaa tcagcaacga gagttggaag   2099
179 ccttcccaca gcttccccca gagcgaagag gctgtagtca tgtccccatc ccccactgga   2159
181 ttccctacaa ggagaggcct tgggcccaga tgagccagta cagactccag acagaggggc   2219
183 ccttggggcc ctccaacctc aggtgatgag ctgagaaaga tgttcacgtc taagcgtcca   2279
185 gtgtgcaccc agcgctccat agacgccttt gtgaactgaa aagagactgg cagagtcccg   2339
187 agaagatggg gccctggctt tccagggagt gcagcaagca gccggcctgc aggtgagcat   2399
189 ggaggcccgg ccctcaccgc ctcgaagcca tgccccagat gccactgcca cagcgggcgc   2459
191 tcgctcctcc ctaggctgtt ttagtatttg gatttgcatt ccatcccttg ggagggagtc   2519
193 ctcagggcca ctagtgatga gccaagagga gtgggggttg ggggcgctcc tttctgtttc   2579
195 cgttaggcca cagactcttc acctggctct gaagagccac tcttacctcg gtcccctccc   2639
197 agtggtccca ccttctccac cctgccctgc caagtcccct gcatgcccac cgctctccat   2699
199 cctccctcct ctccctcttc ctcccgtgga gacagtattt ctttctgtct gtccctttgg   2759
201 cccagaccca gcctgaccaa cgatgagcat ttcttaggct cagctcttga tacggaaacg   2819
203 agtgtcttca ctccagccag catcatggtc ttcggtgctt cccgggcccg gggtctgtcg   2879
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RAW SEQUENCE LISTING   DATE: 02/27/2002
PATENT APPLICATION: US/10/067,482   TIME: 08:26:01

     Input Set : A:\1U 102 R1.ST25.txt
     Output Set: N:\CRF3\02272002\J067482.raw

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205 ggagggaaga gaactgggcc tgacctacct gaactgactg gccctccgag gtgggtctgg   2939
207 gacatcctag aggccctaca tttgtccttg datagGGGAC cgggggggggc ttggaatgtt   2999
209 gcaaaaaaaa aagttaccca agggatgtca gttttttatc cctctgcatg ggttggattt   3059
211 tccaaaatca taatttgcag aaggaaggcc agcatttatg atgcaatatg taattatata   3119
213 tagggtggcc acactagggc ggggtccttc cccctcaca gctttggccc ctttcagaga    3179
215 ttagaaactg ggttagagga ttgcagaaga cgagtggggg gagggcaggg aagatgcctg   3239
217 tcgggttttt agcacagttc atttcactgg gattttgaag catttctgtc tgaacacaaa  .3299
219 gcctgttcta gtcctggcgg aacacactgg gggtgggggc ggggggaagat gcggtaatga .3359
221 aaccggttag tcaattttgt cttaatattg ttgacaattc tgtaaagttc cttttatga    3419
223 atatttctgt ttaagctatt tcacctttct tttgaaatcc ttcccttta aggagaaaat    3479
225 gtgacacttg tgaaaaagct tgtaagaaag cccctccctt ttttctttaa acctttaaat   3539
227 gacaaatcta ggtaattaag gttgtgaatt tttatttttg ctttgttttt aatgaacatt   3599
229 tgtctttcag aataggattg tgtgataatg tttaaatggc aaaaacaaaa catgattttg   3659
231 tgcaattaac aaagctactg caagaaaaat aaaacacttc ttggtaacac aaaaaaaaaa   3719
233 aaaaaaaa                                                           3727
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236 <210> SEQ ID NO: 2
237 <211> LENGTH: 553
238 <212> TYPE: PRT
239 <213> ORGANISM: homo sapiens
241 <400> SEQUENCE: 2
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243 Met Ala Ala Val Ser Leu Arg Leu Gly Asp Leu Val Trp Gly Lys Leu
244 1               5                   10                  15
247 Gly Arg Tyr Pro Pro Trp Pro Gly Lys Ile Val Asn Pro Pro Lys Asp
248             20                  25                  30
251 Leu Lys Lys Pro Arg Gly Lys Lys Cys Phe Phe Val Lys Phe Phe Gly
252         35                  40                  45
255 Thr Glu Asp His Ala Trp Ile Lys Val Glu Gln Leu Lys Pro Tyr His
256     50                  55                  60
259 Ala His Lys Glu Glu Met Ile Lys Ile Asn Lys Gly Lys Arg Phe Gln
260 65                  70                  75                  80
263 Gln Ala Val Asp Ala Val Glu Glu Phe Leu Arg Arg Ala Lys Gly Lys
264             85                  90                  95
267 Asp Gln Thr Ser Ser His Asn Ser Ser Asp Asp Lys Asn Arg Arg Asn
268         100                 105                 110
271 Ser Ser Glu Glu Arg Ser Arg Pro Asn Ser Gly Asp Glu Lys Arg Lys
272         115                 120                 125
275 Leu Ser Leu Ser Glu Gly Lys Val Lys Lys Asn Met Gly Glu Gly Lys
276     130                 135                 140
279 Lys Arg Val Ser Ser Gly Ser Ser Glu Arg Gly Ser Lys Ser Pro Leu
280 145                 150                 155                 160
283 Lys Arg Ala Gln Glu Gln Ser Pro Arg Lys Arg Gly Arg Pro Pro Lys
284             165                 170                 175
287 Asp Glu Lys Asp Leu Thr Ile Pro Glu Ser Ser Thr Val Lys Gly Met
288         180                 185                 190
291 Met Ala Gly Pro Met Ala Ala Phe Lys Trp Gln Pro Thr Ala Ser Glu
292         195                 200                 205
295 Pro Val Lys Asp Ala Asp Pro His Phe His His Phe Leu Leu Ser Gln
296     210                 215                 220
299 Thr Glu Lys Pro Ala Val Cys Tyr Gln Ala Ile Thr Lys Lys Leu Lys
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/067,482

DATE: 02/27/2002
TIME: 08:26:01

Input Set : A:\1U 102 R1.ST25.txt
Output Set: N:\CRF3\02272002\J067482.raw

```
300 225                     230                     235                     240
303 Ile Cys Glu Glu Glu Thr Gly Ser Thr Ser Ile Gln Ala Ala Asp Ser
304               245                     250                     255
307 Thr Ala Val Asn Gly Ser Ile Thr Pro Thr Asp Lys Lys Ile Gly Phe
308               260                     265                     270
311 Leu Gly Leu Gly Leu Met Gly Ser Gly Ile Val Ser Asn Leu Leu Lys
312           275                     280                     285
315 Met Gly His Thr Val Thr Val Trp Asn Arg Thr Ala Glu Lys Cys Asp
316       290                     295                     300
319 Leu Phe Ile Gln Glu Gly Ala Arg Leu Gly Arg Thr Pro Ala Glu Val
320 305                     310                     315                     320
323 Val Ser Thr Cys Asp Ile Thr Phe Ala Cys Val Ser Asp Pro Lys Ala
324               325                     330                     335
327 Ala Lys Asp Leu Val Leu Gly Pro Ser Gly Val Leu Gln Gly Ile Arg
328               340                     345                     350
331 Pro Gly Lys Cys Tyr Val Asp Met Ser Thr Val Asp Ala Asp Thr Val
332           355                     360                     365
335 Thr Glu Leu Ala Gln Val Ile Val Ser Arg Gly Gly Arg Phe Leu Glu
336       370                     375                     380
339 Ala Pro Val Ser Gly Asn Gln Gln Leu Ser Asn Asp Gly Met Leu Val
340 385                     390                     395                     400
343 Ile Leu Ala Ala Gly Asp Arg Gly Leu Tyr Glu Asp Cys Ser Ser Cys
344               405                     410                     415
347 Phe Gln Ala Met Gly Lys Thr Ser Phe Phe Leu Gly Glu Val Gly Asn
348               420                     425                     430
351 Ala Ala Lys Met Met Leu Ile Val Asn Met Val Gln Gly Ser Phe Met
352           435                     440                     445
355 Ala Thr Ile Ala Glu Gly Leu Thr Leu Ala His Val Thr Gly Gln Ser
356       450                     455                     460
359 Gln Gln Thr Leu Leu Asp Ile Leu Asn Gln Gly Gln Leu Ala Ser Ile
360 465                     470                     475                     480
363 Phe Leu Asp Gln Lys Cys Gln Asn Ile Leu Gln Gly Asn Phe Lys Pro
364               485                     490                     495
367 Asp Phe Tyr Leu Lys Tyr Ile Gln Lys Asp Leu Arg Leu Ala Ile Ala
368           500                     505                     510
371 Leu Gly Asp Ala Val Asn His Pro Thr Pro Met Ala Ala Ala Ala Asn
372           515                     520                     525
375 Glu Val Tyr Lys Arg Ala Lys Ala Leu Asp Gln Ser Asp Asn Asp Met
376       530                     535                     540
379 Ser Ala Val Tyr Arg Ala Tyr Ile His
380 545                     550
383 <210> SEQ ID NO: 3
384 <211> LENGTH: 547
385 <212> TYPE: PRT
386 <213> ORGANISM: homo sapiens
388 <400> SEQUENCE: 3
390 Met Ala Ala Val Ser Leu Arg Leu Gly Asp Leu Val Trp Gly Lys Leu
391 1                     5                     10                     15
394 Gly Arg Tyr Pro Pro Trp Pro Gly Lys Ile Val Asn Pro Pro Lys Asp
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VERIFICATION SUMMARY
PATENT APPLICATION: US/10/067,482

DATE: 02/27/2002
TIME: 08:26:02

Input Set : **A:\1U 102 R1.ST25.txt**
Output Set: **N:\CRF3\02272002\J067482.raw**

L:9 M:270 C: Current Application Number differs, Replaced Current Application No
L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date